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Committee on the Peaceful Uses of Outer Space
Scientific and Technical Subcommittee
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Draft report

II. United Nations Programme on Space Applications

1. In accordance with General Assembly resolution 70/82, the Subcommittee considered agenda item 5, "United Nations Programme on Space Applications".

2. At the 846th meeting, the Expert on Space Applications made a statement outlining the activities carried out and planned under the United Nations Programme on Space Applications.

3. The Subcommittee noted with satisfaction the work carried out by the Office under the Programme and expressed its appreciation to Takao Doi, the Expert on Space Applications, for his excellent work in furthering the objectives of the Programme.

4. The representatives of Chile, China, France, Germany, Japan, Nigeria, Sri Lanka and the United States made statements under agenda item 5. A statement was also made under the item by the representative of Chile on behalf of the Group of Latin American and Caribbean States. An observer for the World Meteorological Organization (WMO) also made a statement.

5. The Subcommittee heard the following scientific and technical presentations:

(a) "Educational training programme of RCSSTEAP in 2016" by the representative of China;

(b) "Experimental and utilization project of the Japanese Experimental Module 'Kibo'", by the representative of Japan;

(c) "Community of human spaceflight", by the representative of the United States.

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A. Activities of the United Nations Programme on Space Applications

6. The Subcommittee had before it the report of the Expert on Space Applications, outlining the mandate and orientation of the United Nations Programme on Space Applications (see A/AC.105/1107, paras. 1-17). The Subcommittee noted that the Programme for 2015 had been carried out satisfactorily and commended the work accomplished by the Office under the Programme.

7. The Subcommittee noted that the priority areas of the Programme were environmental monitoring, natural resource management, satellite communications for tele-education and telemedicine applications, disaster risk reduction, the use of global navigation satellite systems, the Basic Space Science Initiative, space law, climate change, the Basic Space Technology Initiative and the Human Space Technology Initiative, and biodiversity and ecosystems.

8. The Subcommittee noted that the Office for Outer Space Affairs and the Government of Japan, in collaboration with Japan Aerospace Exploration Agency (JAXA), had launched the United Nations/Japan Cooperation Programme on CubeSat Deployment from the International Space Station (ISS) Japanese Experiment Module (Kibo), known as "KiboCube", in September 2015. The objective of the programme is to promote international cooperation and capacity-building in space technology and its applications under the United Nations Programme on Space Applications by providing opportunities to educational or research institutions in developing countries to deploy small satellites (CubeSats) from the Japanese Experiment Module (Kibo).

9. The Subcommittee welcomed the successful implementation of the third cycle of the Zero-Gravity Instrument Project launched in 2012 as part of the capacity-building activities of the Human Space Technology Initiative (see A/AC.105/1108). The Subcommittee also noted that currently 45 institutions around the world were participating in the project.

10. The Subcommittee noted with appreciation the voluntary contributions, cash and in-kind, provided by various Member States and organizations for 2015 (see A/AC.105/1107, para. 42).

1. Year 2015

Meetings, seminars, symposiums, training courses and workshops

11. The Subcommittee had recommended the approval of the following programme of meetings, symposiums and workshops for 2015 (A/AC.105/1107, annex I):

(a) United Nations/Japan Workshop on Space Weather: Science and Data Products from International Space Initiative Instruments, held in Fukuoka, Japan, from 2 to 6 March;

(b) United Nations/Russian Federation Workshop on the Applications of Global Navigation Satellite Systems, held in Krasnoyarsk, Russian Federation, from 18 to 22 May;

(c) Meeting on the applications of space science and technology for public health, organized by the World Health Organization and the Office for Outer Space Affairs, held in Geneva on 15 and 16 June.

Long-term fellowships for in-depth training

12. The Subcommittee expressed its appreciation to the Government and the Ministry of Industry of Italy, which, through the Politecnico di Torino and the Istituto Superiore Mario Boella and with the collaboration of the Istituto Nazionale di Ricerca Metrologica, had provided fellowships for the eleventh master class on global navigation satellite systems (GNSS) and related applications, which concluded in September, and the twelfth class, which had begun in October 2015.

13. The Subcommittee expressed its appreciation to the Government of Japan for continuing the United Nations/Japan Long-Term Fellowship Programme on Nanosatellite Technologies, in cooperation with the Kyushu Institute of Technology, and noted that the six fellows selected in the 2015 round had begun their studies in October 2015.

14. The Subcommittee expressed its appreciation to the Government of Germany, which, in collaboration with the Center of Applied Space Technology and Microgravity at Bremen University and the German Aerospace Center (DLR), had continued the Fellowship Programme for the Drop Tower Experiment Series and successfully conducted the second cycle of the programme.

2. Year 2016

Meetings, seminars, symposiums, training courses and workshops

15. The Subcommittee recommended the approval of the following programme of forums, meetings, symposiums and workshops for 2016:

(a) United Nations/Costa Rica Workshop on Human Space Technology, to be held in San José from 7 to 11 March;

(b) United Nations/India Workshop on the Use of Earth Observation Data in Disaster Management and Risk Reduction: Sharing the Asian Experience, to be held in Hyderabad, India, from 8 to 10 March;

(c) United Nations/Kenya Workshop on Space Technology and Applications for Wildlife Management and Protecting Biodiversity, to be held in Nairobi from 27 to 30 June;

(d) United Nations/Austria Symposium on Integrated Space Technology Applications for Climate Change, to be held in Graz, Austria, from 12 to 14 September;

(e) United Nations/International Astronautical Federation Workshop on Space Technology for Socioeconomic Benefits, to be held in Guadalajara, Mexico, from 23 to 25 September;

(f) United Nations/Islamic Republic of Iran Workshop on the Use of Space Technology for Dust Storm and Drought Monitoring in the Middle East Region, to be held in Tehran from 5 to 9 November;

(g) United Nations/Nepal Workshop on the Applications of Global Navigation Satellite Systems, to be held in Kathmandu from 5 to 9 December;

(h) United Nations/South Africa Symposium on Basic Space Technology, to be held in South Africa towards the end of this year.

B. Regional and interregional cooperation

16. The Subcommittee noted that the schedule of nine-month postgraduate courses for the period 2014-2016 offered by the regional centres for space science and technology education, affiliated to the United Nations, was annexed to the report of the Expert on Space Applications (A/AC.105/1107, annex III).

17. The Subcommittee recalled that the General Assembly, in its resolution 70/82, had emphasized the importance of regional and interregional cooperation in the field of space activities to assist States in the development of their space capabilities and contribute to the implementation of the 2030 Agenda for Sustainable Development, and had noted in that regard the importance of the equal participation of women in all fields of science and technology.

18. The Subcommittee noted that the ninth meeting of the Council of the Asia-Pacific Space Cooperation Organization (APSCO) had been held in China from 28 to 30 October 2015.

19. The Subcommittee noted that the Seventh Space Conference of the Americas had been held in Managua from 17 to 19 November 2015.

20. The Subcommittee noted that the sixth African Leadership Conference had been held in Sharm el-Sheikh, Egypt, from 1 to 3 December 2015 and that the Conference had also discussed the African space policy and the African space strategy, which would be considered by the African Union in 2016.

21. The Subcommittee noted that the twenty-second session of the Asia-Pacific Regional Space Agency Forum (APRSAF) on the theme "Sharing solutions through synergy in space" had been held in Bali, Indonesia, from 1 to 4 December 2015. The twenty-third session of APRSAF would be held in Manila in November 2016.

22. The Subcommittee was informed of the in-cash contributions received from donors in past years, and member States were encouraged to further support the fulfilment of the objectives of the international community in supporting the development of capacity in space science and technology.

IV. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment

23. In accordance with General Assembly resolution 70/82, the Subcommittee considered agenda item 7, "Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment".

24. The representatives of China, Egypt, India, Indonesia, Iran (Islamic Republic of), Italy, Japan and the United States made statements under agenda item 7. During the general exchange of views, statements relating to the item were also made by representatives of other member States.

25. The Subcommittee heard the following scientific and technical presentations:

(a) "NOAA meteorological satellite update", by the representative of the United States;

(b) "PSIPW: Eighth Award — invitation for nomination", by the observer for PSIPW.

26. In the course of the discussions, delegations reviewed national, bilateral, regional and international programmes on remote sensing, notably in the following areas: monitoring climate change; disaster management; volcanology and seismology; managing ecosystems and natural resources; monitoring air and water quality for aerosols and pollutants; meteorology and weather forecasting; agriculture; irrigation and drought monitoring; monitoring deforestation and forest degradation, coastal zones, watershed development and land use; ice-cover and glacial monitoring; oceanography and temperature monitoring; rural development, urban planning; infrastructure development and oil and gas pipeline monitoring; global health; and food security and crop yield quantification.

27. The Subcommittee noted the ongoing capacity-building efforts by developing countries in using Earth observation to fight poverty, improve quality of life and advance their socioeconomic development through a rational and sustainable exploitation of resources. In that regard, the Subcommittee also noted that there had been an increase of collaborative efforts of developing countries with the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) to build disaster management capacity and disseminate information to policymakers at the national level.

28. The Subcommittee noted that the use of Earth observation data by decision makers at the national and local levels in developing countries had resulted in the delivery of more targeted and effective social services, while at the same time achieving significant cost reductions.

29. The Subcommittee noted efforts to promote the development of applications using Earth observation data and to foster commercial and governmental channels to disseminate such applications as a way of encouraging the increased use of satellite-derived data by decision makers and promoting local and regional economic development.

30. The Subcommittee noted the commitment of member States to cooperating internationally in the collection, processing and dissemination of Earth observation data and applications, in particular for the benefit of developing countries, to promote well-informed decisions. The Subcommittee noted in that regard various regional and international initiatives including the Regional Visualization and Monitoring System (SERVIR) and the Space Applications for Environment (SAFE) initiative of APRSAF.

31. The Subcommittee noted a number of forthcoming launches of next-generation Earth observation satellites, to complement existing operational Earth observation

satellites, that provided high-resolution, high-accuracy and sustained observation of the Earth environment. The Subcommittee also noted plans of member States to jointly develop and build such satellites. Combined with ground-based systems, all of those initiatives could further improve the monitoring of the Earth environment.

32. The Subcommittee noted the continued support for the activities of the Committee on Earth Observation Satellites (CEOS) and that the Japan Aerospace Exploration Agency had taken up the chairmanship of CEOS for 2015. The Subcommittee also noted that the thirtieth plenary session of CEOS would take place in Brisbane, Australia, in October 2016.

33. The Subcommittee noted the continued support for the activities of the Group on Earth Observations (GEO) and that it had developed a 10-year implementation plan to promote informed decision-making based on Earth observation data and applications, which had been endorsed at its Ministerial Summit held in Mexico City in November 2015. The Subcommittee also noted that the next GEO ministerial summit would be held in Saint Petersburg, Russian Federation, in November 2016.

XII. Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union

34. In accordance with General Assembly resolution 70/82, the Subcommittee considered agenda item 15, "Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union", as a single issue/item for discussion.

35. The representatives of Indonesia, South Africa and Venezuela (Bolivarian Republic of) and the representative of Chile, on behalf of the Group of Latin American and Caribbean States, made statements under agenda item 15. During the general exchange of views, statements relating to the item were made by representatives of member States.

36. The Subcommittee noted with appreciation the information provided in the annual report for 2015 of the Radiocommunication Bureau of ITU on the use of the geostationary satellite orbit and other orbits (see www.itu.int/ITU-R/space/snl/report), as well as other documents referred to in conference room paper A/AC.105/C.1/2016/CRP.16. The Subcommittee invited ITU to continue to submit reports to it.

37. Some delegations expressed the view that the geostationary orbit was a limited natural resource that was at risk of becoming saturated, thereby threatening the sustainability of space activities in that environment; that its exploitation should be

rationalized; and that it should be made available to all States, under equitable conditions, irrespective of their current technical capabilities, taking into particular account the needs of developing countries and the geographical position of certain countries. Those delegations were also of the view that it was important to use the geostationary orbit in compliance with international law, in accordance with the decisions of ITU and within the legal framework established in the relevant United Nations treaties.

38. Some delegations expressed the view that the geostationary orbit, as a limited natural resource clearly in danger of saturation, must be used rationally, efficiently, economically and equitably. That principle was deemed fundamental to safeguarding the interests of developing countries and countries with a certain geographical position, as set out in article 44, paragraph 196.2, of the Constitution of ITU, as amended by the Plenipotentiary Conference held in Minneapolis, United States, in 1998.

39. Some delegations expressed the view that the geostationary orbit provided unique potential for access to communications and information, in particular for assisting developing countries in implementing social programmes, educational projects, dissemination of knowledge and for providing medical assistance.

40. The view was expressed that the current regime for exploitation and utilization of the geostationary orbit provided opportunities mostly to countries with financial and technical capabilities and, in that connection, there was a need to take anticipatory measures to address the potential dominance of such countries in the utilization of space in order to address the needs of developing countries and of countries with a special geographical situation, such as those in equatorial regions.

41. The view was expressed that the utilization by States of the geostationary orbit on the basis of "first come, first served" was unacceptable and that the Subcommittee, with the involvement of ITU, should therefore develop a regime guaranteeing equitable access to orbital positions for States.

42. Some delegations expressed the view that, in order to ensure the sustainability of the geostationary orbit, as well as to assure guaranteed and equitable access to the geostationary orbit according to the needs of all nations, taking into particular account the needs and interests of developing countries, it was necessary to keep that issue on the agenda of the Subcommittee and to explore it further, through the creation of appropriate working groups and legal and technical intergovernmental panels, as necessary.

XIII. Draft provisional agenda for the fifty-fourth session of the Scientific and Technical Subcommittee

43. In accordance with General Assembly resolution 70/82, the Subcommittee considered agenda item 16, "Draft provisional agenda for the fifty-fourth session of the Scientific and Technical Subcommittee".

44. The Subcommittee noted that the Secretariat had scheduled the fifty-fourth session of the Subcommittee to be held from 30 January to 10 February 2017.

45. The Subcommittee also noted that during the consideration of the draft provisional agenda for the fifty-fourth session of the Subcommittee by the Working Group of the Whole, the Working Group had recommended that in view of the adoption of the 2030 Agenda for Sustainable Development at the United Nations summit for the adoption of the post-2015 development agenda, held from 25 to 27 September 2015, the current agenda item of the Subcommittee entitled "Space technology for socioeconomic development in the context of the United Nations Conference on Sustainable Development and the post-2015 development agenda" be renamed "Space for sustainable socioeconomic development".

46. The Subcommittee noted that, in accordance with General Assembly resolution 70/82, it would submit to the Committee its proposal on the draft provisional agenda for the fifty-fourth session of the Subcommittee and recommended that the following items be included in the draft provisional agenda:

1. Adoption of the agenda.
2. Statement by the Chair.
3. General exchange of views and introduction of reports submitted on national activities.
4. United Nations Programme on Space Applications.
5. Space technology for sustainable socioeconomic development.
6. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.
7. Space debris.
8. Space-system-based disaster management support.
9. Recent developments in global navigation satellite systems.
10. Space weather.
11. Near-Earth objects.
12. Use of nuclear power sources in outer space.

    (Work for 2017 as reflected in the extended multi-year workplan of the Working Group (A/AC.105/1065, annex II, para. 9))
13. Long-term sustainability of outer space activities.
14. Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries, without prejudice to the role of the International Telecommunication Union.

    (Single issue/item for discussion)
15. Draft provisional agenda for the fifty-fifth session of the Scientific and Technical Subcommittee, including identification of subjects to be dealt with as single issues/items for discussion or under multi-year workplans.

47. The Subcommittee also noted that in accordance with the agreement reached by the Subcommittee at its forty-fourth session in 2007 (A/AC.105/890, annex I, para. 24), the symposium at the fifty-fourth session of the Subcommittee in 2017 was to be organized by IAF and that the topic of symposium would be communicated to and decided upon by the Committee at its session in June 2016.

48. The view was expressed that due to the unique position of the Subcommittee and the Committee in promoting international cooperation in using outer space for peaceful purposes, cooperation with other United Nations entities should be strengthened in order to promote the use of space science and technology and their applications for peace and security, in particular for combating terrorism. That delegation was further of the view that the Subcommittee should introduce a new agenda item entitled "Space system-based counter-terrorism support" and that in order to combat the threat of international terrorism, the spacefaring nations should make available, at no cost, high-resolution imagery to countries with no such capabilities, to combat terrorism.

49. The view was expressed that the above-mentioned proposal should be duly taken into account for further study by the Subcommittee and the Committee since combating terrorism was of utmost priority.

50. The Subcommittee welcomed with appreciation the compendium of rules of procedures and methods of work related to the Committee on the Peaceful Uses of Outer Space and its subsidiary bodies, contained in conference room paper A/AC.105/C.1/2016/CRP.5, prepared by the Secretariat in accordance with the request by the Subcommittee and the Committee in 2015.